

Product Data Sheet

Product Name: AEBSF.HCl

Cat. No.: GC14502

Chemical Properties

Cas. No. 30827-99-7

Chemical Name 4-(2-aminoethyl)benzenesulfonyl fluoride;hydrochloride

SMILES C1=CC(=CC=C1CCN)S(=O)(=O)F.Cl

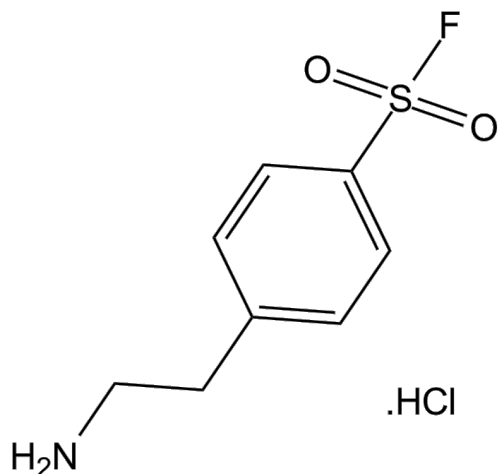
Formula C8H10FNO2S.HCl M.Wt 239.69

Solubility ≥ 12 mg/mL in DMSO, ≥ 15.73 mg/mL in Water, ≥ 23.8 mg/mL in EtOH with gentle warming
Storage Desiccate at -20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure



Protocol

Caution: Product has not been fully validated for medical applications. For research use only.

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Cell experiment [1]:

Cell lines	K695sw, HS695 and SKN695 cells
Preparation method	A β inhibition assay was performed with 0, 0.1, 0.3, 0.6, 0.8, 1.0 and 1.2 mM AEBSF.HCl for 20 min.
Reaction Conditions	0, 0.1, 0.3, 0.6, 0.8, 1.0 and 1.2 mM; 20 mins
Applications	AEBSF.HCl was found to inhibit A β production in various cell lines. In K293 cells transfected with K695sw, AEBSF.HCl showed dose-dependent reduction of A β with the IC_{50} value of about 1 mM. In HS695 and SKN695 cells transfected with wild-type APP695, AEBSF.HCl showed inhibition effect with IC_{50} value of about 300 μ M.

Animal experiment [2]:

Animal models	SD rats
Preparation method	Intrauterine (5 mg or 10 mg AEBSF.HCl per injection) or tail vein (10 mg AEBSF.HCl per rat) administration on day 3 of pregnancy
Dosage form	5 mg or 10 mg ; i.v.

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Applications	According to the number of visible implanted embryos on day 8 of pregnancy, it was shown that AEBSF.HCl inhibited embryo implantation in rat.
References:	
[1] Citron M, Diehl T S, Capell A, et al. Inhibition of amyloid β -protein production in neural cells by the serine protease inhibitor AEBSF. Neuron, 1996, 17(1): 171-179.	
[2] Jiang YH, Shi Y, He YP, Du J, Li RS, Shi HJ, Sun ZG, Wang J. Serine protease inhibitor 4-(2-aminoethyl)benzenesulfonyl fluoride hydrochloride (AEBSF) inhibits the rat embryo implantation in vivo and interferes with cell adhesion in vitro. Contraception. 2011 Dec;84(6):642-8.	

Background

AEBSF.HCl is a broad-spectrum, irreversible inhibitor of serine proteases, capable of inhibiting trypsin, kallikrein, plasmin, thrombin, chymotrypsin, and related thrombolytic enzymes. The mechanism of action of AEBSF.HCl involves covalent binding to serine residues, blocking the active center of the protease, thereby inhibiting its activity [1].

In vitro, AEBSF.HCl inhibits the production of A β in various cell lines. AEBSF.HCl demonstrates a dose-dependent reduction of A β in K293 cells transfected with K695 sw, with an IC_{50} value of about 1 mM, and shows a dose-dependent inhibitory effect in HS 695 and SKN 695 cells transfected with wild-type APP 695, with an IC_{50} value of about 300 μ M. AEBSF.HCl also increases α -cleavage while inhibiting β -cleavage [1]. Additionally, as a protease inhibitor, AEBSF.HCl (150 μ M) incubated with macrophages for 6 hours can block the lysis of leukemia cells by monocyte-derived macrophages [2].

In vivo, AEBSF.HCl (5 mg or 10 mg; i.v.) inhibits rat embryo implantation, with a visible reduction in the number of implanted embryos on day 8 of pregnancy [3]. AEBSF.HCl (76.8 mg/kg/d, i.p.) extends the survival time of mice given a lethal infection of *Toxoplasma gondii* [4].

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- [1] Citron M, Diehl T S, Capell A, et al. Inhibition of amyloid β -protein production in neural cells by the serine protease inhibitor AEBSF. *Neuron*, 1996, 17(1): 171-179.
- [2] Nakabo Y, Pabst M J. Lysis of leukemic cells by human macrophages: inhibition by 4-(2-aminoethyl)-benzenesulfonyl fluoride (AEBSF), a serine protease inhibitor. *Journal of leukocyte biology*, 1996, 60(3): 328-336.
- [3] Jiang YH, Shi Y, He YP, Du J, Li RS, Shi HJ, Sun ZG, Wang J. Serine protease inhibitor 4-(2-aminoethyl)benzenesulfonyl fluoride hydrochloride (AEBSF) inhibits the rat embryo implantation in vivo and interferes with cell adhesion in vitro. *Contraception*. 2011 Dec;84(6):642-8.
- [4] Buitrago-Rey R, et al. Evaluation of two inhibitors of invasion: LY311727 [3-(3-acetamide-1-benzyl-2-ethyl-indolyl-5-oxy)propane phosphonic acid] and AEBSF [4-(2-aminoethyl)-benzenesulphonyl fluoride] in acute murine toxoplasmosis. *J Antimicrob Chemother*. 2002 May;49(5):871-4

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